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ABSTRACT

This paper describes the structure and operation of an evaluation system for the developmental education program at Dalton Junior College (Georgia). All applicants for admission to the college who score below 330 on either section of the Scholastic Aptitude Test are required to take the Comparative Guidance and Placement (CGP) test to determine their proficiency in various skills. Those falling below the institutional cut-off point on the CGP are required to complete Special Studies courses before being admitted to college credit courses. Students may exit from a Special Studies course by completing the course requirements and scoring above the cut-off point on the CGP in that area; otherwise they are advised to enroll in the next sequential developmental course. In order to monitor student progress, an evaluation system is utilized which allows identification, testing, registration, and accounting for every Special Studies student. This system also allows followup studies of subsequent student progress in credit courses. Among the methods used to evaluate the program are analyses of CGP score differentials and retention rates in subsequent credit courses. Included in the paper are graphic representations of the Special Studies program and the evaluation system. Special Studies course descriptions and content objectives are appended. (JDS)

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A Systems Analysis and Evaluation of a Junior College Developmental Studies Program

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A Systems Analysis and Evaluation of a Junior College Developmental Studies Program

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Abstract

A systems analysis of the Dalton Junior College Special Studies program was performed in order to document the procedures for administering a developmental education program. The methods are outlined for identifying and placing students in appropriate remedial class sections. The methods for keeping student records and monitoring academic progress are also given. Outlines of course content objectives and teaching and counseling strategies to accomplish these objectives are included.

Since evaluation of student performance allows for continual program revision, the multiple indicators used for evaluation are vital components of this study. An analysis of Comparative Guidance and Placement test scores indicates that significant score increases are made by students in each Special Studies course every quarter. In terms of retention, it was found that 70% of the Special Studies students move on into credit course work. An evaluation of the performance of former Special Studies students in credit courses has shown that these students perform as well as the other students in their classes. An in depth evaluation of performance in credit English courses indicates that former Special Studies students perform at a higher level than would be expected from their entry test scores.

Suggested Key Words

Developmental
Remedial
Community College
Evaluation
Multiple Indicators
Comparative Guidance and Placement Program

A SYSTEMS ANALYSIS AND EVALUATION OF A JUNIOR COLLEGE DEVELOPMENTAL STUDIES PROGRAM

INTRODUCTION

Dalton Junior College, like many other community and junior colleges, is an "open-door" institution. As a result, many applicants are under-prepared for college work and lack the skills necessary to succeed in an academic environment. In an effort to meet the needs of these students, the Board of Regents of Georgia has instituted a state-wide, mandatory program for developmental education at the college level. This program is referred to as Special Studies and consists of a series of courses dealing with basic knowledge and skills designed to increase academic development in specific areas.

This study describes and analyzes the structure of the system used to administer the Special Studies program at Dalton Junior College. Evaluation of Special Studies student performance allows for continual program revision. The multiple indicators used for this evaluation process are vital components of this study.

PROGRAM OVERVIEW

All applicants for admission to Dalton Junior College who score 330 or below on either section of the SAT test are required to take the Comparative Guidance and Placement Test (CGP) to determine their proficiency in the use of reading, language, and mathematical skills. Applicants falling at or below the institutional cut-off on the language, reading, or mathematics sections of the CGP are required to complete appropriate Special Studies courses before being admitted to the respective college credit courses. These institutional cut-off scores on the CGP are: Reading-43, English-48, Mathematics-46.

These courses are open to anyone who has a need for further development

in one or more of the subjects covered. They are especially designed for the following three groups:

1. Students whose Comparative Guidance and Placement Test scores and/or other test results require that they enroll in Special Studies courses before being admitted to regular college courses.

2. Students enrolled in regular college credit courses who feel a need for additional preparation in a specific subject.

3. Adults who would like to improve their development in a particular academic area on an audit basis.

The Special Studies Program includes the following courses:
(See Appendix A for complete course descriptions and content objectives)

English 096, 097, 098. Special Studies English.
A progressive series of courses designed to increase the student's proficiency in the written communication skills necessary for the successful completion of English 101. (Institutional credit).

Mathematics 096, 097, 098. Special Studies Mathematics.
A study of the fundamental operations and functions of arithmetic and algebra designed to give the student adequate background to successfully complete the required courses in mathematics. (Institutional credit)

Psychology 099. Educational, Vocational and Personal Development.
A course designed to support students in the areas of vocational, educational, and personal decision-making. (Institutional credit)

Reading 096, 097. 098. Special Studies Reading.
A progressive series of courses designed to aid the student in developing the reading skills necessary for satisfactory completion of college level courses. (Institutional credit)

A student may exit from a Special Studies course by completing the necessary course material and scoring above the institutional cut-off score on the CGP test in that area. Students who do not exit from a course are advised to enroll in the next sequential Special Studies course the following quarter. Students are allowed up to three quarters of enrollment to complete the Special Studies course content objectives and the CGP tests. Those students failing to meet these minimum standards in the time given are excluded from academic degree courses and are encouraged to enroll in vocational-technical certificate programs.

SYSTEMS ANALYSIS

In order to monitor the progress of Special Studies students, ensure compliance with the system regulations, and file reports with the Board of Regents an elaborate record keeping system was developed. Figure 1 shows a systems analysis of this administrative process. By following this system, we are able to identify, test, advise, register, and account for every student who is assigned to the Special Studies program. Follow up studies can be conducted on the progress of each student as grades earned in credit courses are monitored as long as the student continues to enroll in the college.

TEACHING AND COUNSELING STRATEGIES

A unique feature of the Dalton Junior College Special Studies program is the concept of multiple sectioning. All sections of Special Studies English are offered at the same class period and all mathematics sections at another period during both the morning and the evening. This system allows for the sectioning of students according to needs in a given area. All new Special Studies students are evaluated as to areas of need by either the CGP test in English or a departmental placement examination in mathematics. Multiple sectioning in mathematics, for example, permits students who need to work on basic number operations to be placed in one section while those dealing with elementary algebraic concepts are in another.

Because flexibility is a direct result of the multiple sectioning concept, students can be moved from one section to another during the course of a quarter. Students who find that they are over their heads when their English class begins to write paragraphs can easily be moved to an appropriate section which is still working on basic sentence structure. Likewise, students who have progressed beyond the level of their section can be moved ahead during the course of a quarter.

FIGURE 1

SPECIAL STUDIES SYSTEMS ANALYSIS

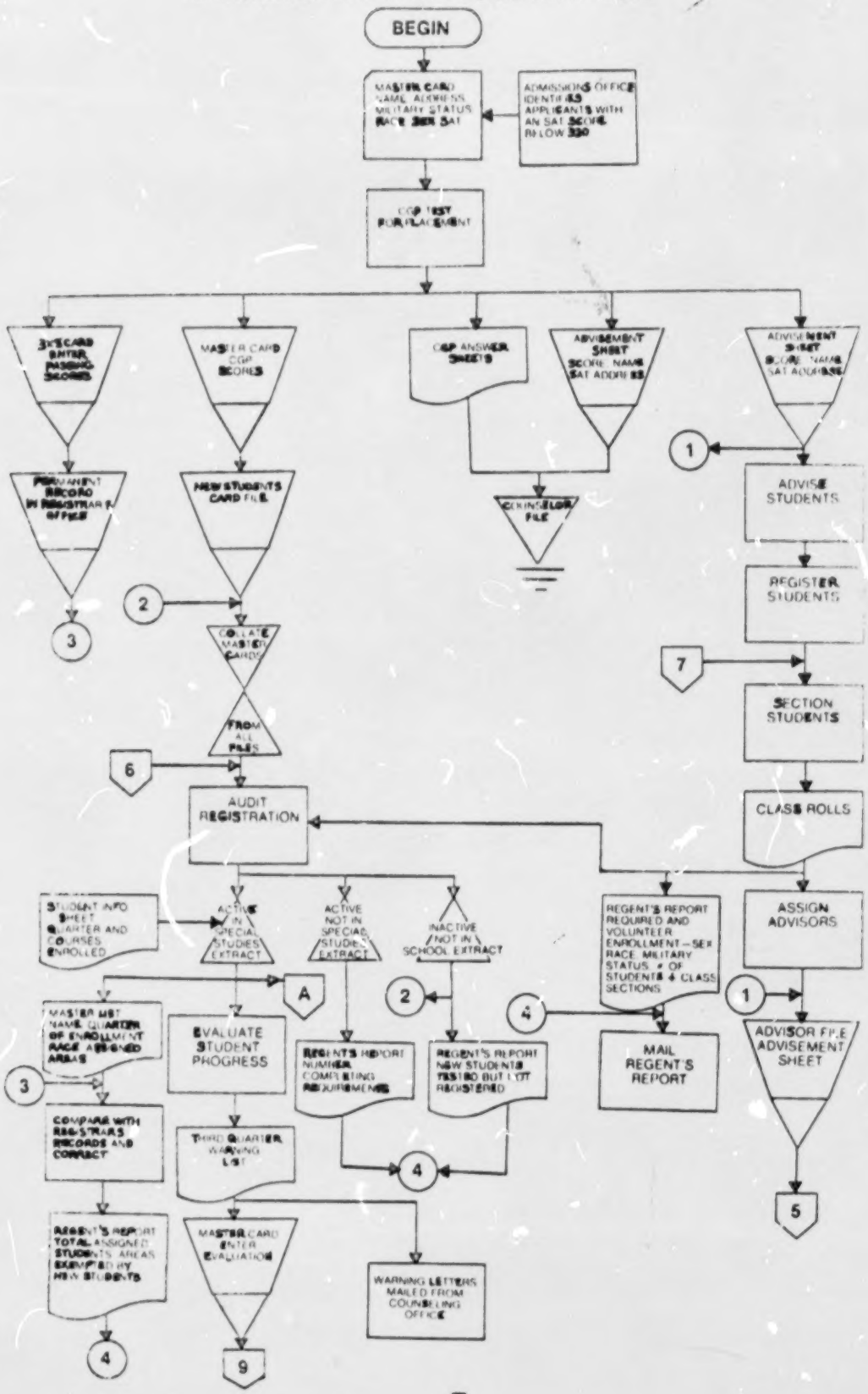
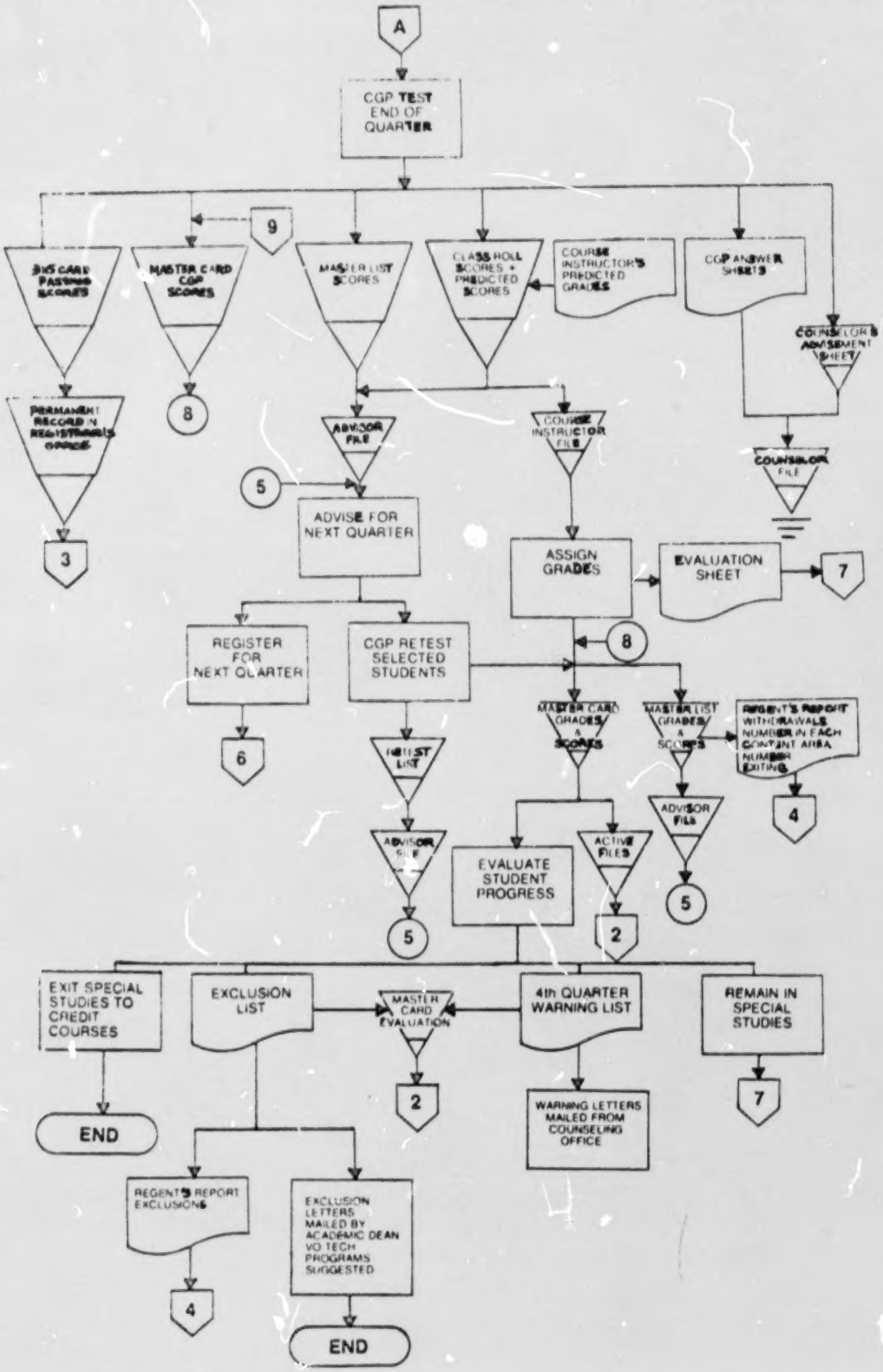


FIGURE 1 CONTINUED



The extensive use of a math lab in connection with competency based learning is another unique feature of the Dalton Junior College Special Studies Program. Math students are required to complete daily homework assignments, and those students not achieving 80% competency on these assignments are expected to take advantage of the supplementary material and teacher assistance in math lab until they can satisfactorily rework the homework problems. Students are not allowed to take unit tests until all previous homework has been made up. A grade of 80% is also required on all unit tests. Students not meeting that criterion must do extra work in the laboratory and retake alternate examinations over the same material until a minimum competency of 80% is attained.

Attendance policies in Special Studies courses are based on the assumption that students with deficiencies need to attend class regularly in order to make satisfactory progress. Students are dropped from classes when they have missed the equivalent of one week's classes. No excused absences are granted. Students with unusual hardships are advised to withdraw from a course and register for it later when they will have time to attend the required class sessions.

Counseling services are offered to Special Studies students through a course entitled Educational and Personal Skills Development. This course attempts to assist students in defining their educational, vocational, and personal goals. Group interaction, psychological testing, career and academic exploration, and study skills training are offered as part of the course. Contacts with the counseling staff are thus established early in the students' academic careers, and they know to whom they can turn for assistance if they experience later difficulties.

A Special Studies Newsletter is published quarterly to keep students informed about testing dates, Special Studies policies, and services available

to them. Essays written by students and notes of congratulations to graduating Special Studies students are included when possible. The Newsletter has served not only as a source of information for students but also as a unifying force to tie together a great diversity of students and courses.

Special Studies students are assigned to academic advisors during their first quarter of enrollment. These advisors are chosen from a group of faculty members who teach Special Studies courses on a regular basis. If possible, students are assigned to advisors who are also instructors in their classes. In this way, a faculty advisor is acquainted with a student's work before advisement arrives. Appropriate academic plans and realistic course suggestions can be made on the basis of this personal knowledge.

EVALUATION OF THE PROGRAM

A variety of methods was employed to evaluate the Dalton Junior College Special Studies program. These included studies of CGP score differences and retention and performance in subsequent credit courses. Together these methods provide multiple indicators of program effectiveness.

The CGP test is given not only before enrollment to identify those students who need Special Studies courses, but also at the conclusion of each quarter of study in the program to identify those students who have achieved exit scores. Using scaled scores from these test data, initial and final scores and the differences between these scores were compiled for students enrolled in the program during the four quarters of 1976. These students were divided into nine groups based on content area and quarter of enrollment. A correlated t-test was performed for each group to determine if significant differences existed between initial and final scores. These results are summarized in Table 1.

Table 1

Comparison of Initial and Final CGP Scores for
1976 Special Studies Students

	Initial Score		Final Score		Differences			
Student Group	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Error	N	t
Eng.-1st quarter	41.29	5.90	47.41	7.62	6.12	.47	221	13.10*
Eng.-2nd quarter	41.96	6.88	46.84	6.96	4.88	.68	128	7.20*
Eng.-3rd quarter	42.10	7.13	45.93	6.79	3.83	.77	76	4.87*
Math-1st quarter	40.31	5.60	47.00	6.43	6.69	.38	208	17.82*
Math-2nd quarter	45.81	6.51	50.15	6.55	4.34	.35	188	12.39*
Math-3rd quarter	46.78	6.73	43.32	5.76	3.67	.50	90	7.34*
Rdg.-1st quarter	38.64	6.48	39.02	7.64	4.68	.44	188	10.73*
Rdg.-2nd quarter	35.68	4.85	40.04	6.29	3.34	.69	60	4.86*
Rdg.-3rd quarter	37.24	4.66		6.78	2.80	.78	51	3.57**

*p .001
**p .005

Three issues need to be considered in interpreting these data. The first is that there is no control group with which to compare these results. Since enrollment in Special Studies is required for all associate degree students whose CGP and SAT scores fall below the cut-off levels there is no comparable control group available from the student body.

The second is the issue of whether the increases in CGP scores are primarily the result of regression. All students in Special Studies are screened using the SAT before the initial CGP is administered. If regression were to occur, it would be likely to occur between the SAT and the initial CGP and would be reflected in the initial CGP scores.

And the final question is whether the CGP score increases are the result of Special Studies classes or if CGP scores increase simply from the stimulation of the college environment. The CGP is administered the first day of class to all English 101 students. The scaled scores of students taking English 101 during their first quarter of college enrollment were compared with those taking English 101 during their second quarter of enrollment using a t-test. No students who had taken Special Studies English were included.

The results of this comparison, shown in Table 2, indicate that there are no isgnificant differences between the CGP scores of English 101 students in their first and those in their second quarter of enrollment in college.

Table 2

Comparison of English CGP Scores of 1st and 2nd Quarter Non-Special Studies Students

1st Quarter Students			2nd Quarter Students			
Mean	Std.Dev.	N	Mean	Std.Dev.	N	t
57.35	5.39	86	56.97	5.80	79	0.43

These results support the conjecture that the increase in CGP scores is related to Special Studies class participation and not merely to the college environment.

In order to evaluate the retention of Special Studies students into credit courses, the percent of Special Studies students moving into credit courses was computed. It was found that of 636 Special Studies students, 446 or 70% enrolled in subsequent credit courses. This figure shows that a majority of students assigned to Special Studies courses do remain in school and attempt credit course work.

To evaluate performance in credit courses, a comparison was made of the grades earned by former Special Studies students with those earned by other students in the same classes. These comparisons were made for students enrolled in credit English, mathematics, and social science courses who had been assigned to Special Studies English, mathematics, and reading courses respectively. These results, which are summarized in Table 3, indicate that when Special Studies students move into credit courses, they perform as well as the other students in their classes.

Table 3

Comparison of Performance of Special Studies and Regular Placement Students in College Credit Courses

	Former Special Studies		Regular Placement	
	N	% passing (D or better)	N	% passing (D or better)
English	163	68.1	519	67.5
Math	260	61.2	521	55.9
Social Science	80	78.8	1717	81.0

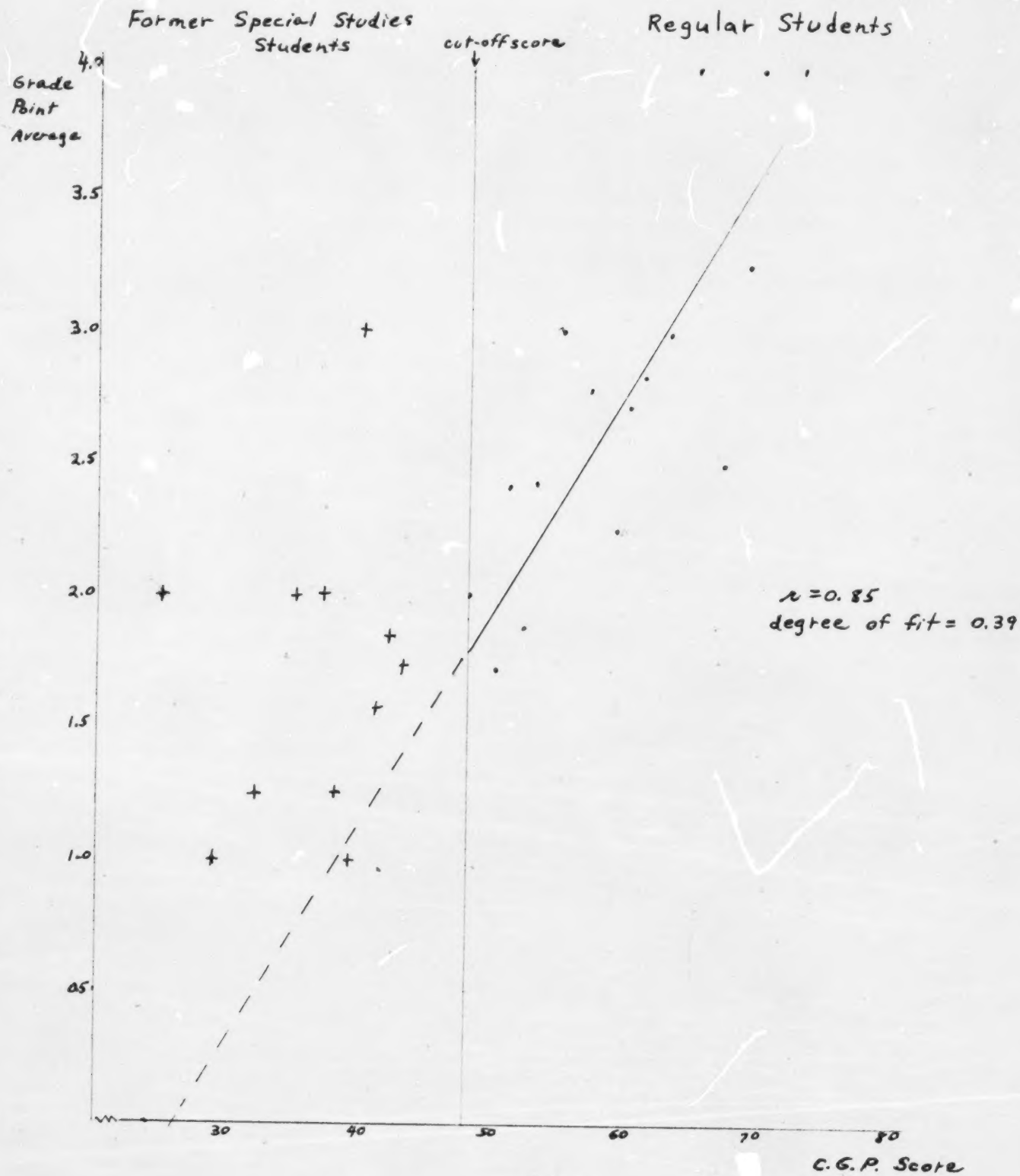
A further study was conducted to determine whether students who take credit courses following Special Studies would have performed at the same level if they had not participated in the program. Using the test data from English 101 classes, the mean grade point average from this course for students achieving each CGP score was determined. The regression equation and coefficient of correlation for these two variables were computed. These data were graphed, and the regression line projected to lower CGP scores. On this graph the same variables for students taking English 101 following Special Studies English were plotted. These data are shown in Figure 2.

The data points for Special Studies students appeared to deviate more from the projected regression line than those of the regular students and to be generally above the projected regression line. The root mean squared error of the Special Studies mean grades from the projected regression line was computed. This was found to be 0.97 while the degree of fit for the regular students was 0.39. This indicates former Special Studies students perform at a higher level in English 101 than their entry scores would indicate.

CONCLUSION

Taken as a whole these multiple evaluations imply that the Special Studies Program at Dalton Junior College is effectively meeting the needs of many students who were under-prepared for college work.

Figure 2
Comparison of C.G.P. Score and Performance of Regular Students and Former Special Studies Students in English 101



APPENDIX A

SPECIAL STUDIES COURSE DESCRIPTIONS

AND CONTENT OBJECTIVES

ENGLISH 096, 097, 098

SPECIAL STUDIES ENGLISH

5 HOURS INSTITUTIONAL CREDIT

I. Course Description

English 096, 097, 098. Special Studies English. 5-0-5

A progressive series of courses designed to increase the student's proficiency in the written communication skills necessary for the successful completion of English 101. (Institutional credit)

II. Assigning Students to Special Studies English:

All students entering Dalton Junior College without previous credits in college English are required to take the CGP English placement test. Students who score 53 or better will be assigned to English 101. Students whose scores are 48-52 are required to submit an essay (minimum three paragraphs, 200 words) on an assigned topic. Those who demonstrate acceptable writing skills will be assigned to English 101. Those who fail to meet minimum standards on the essay will be assigned to English 96. Students who score below 48 on the placement test are required to take English 96.

III. Progressing in Special Studies English:

When a student meets all terminal objectives, he must exit Special Studies English, whether it be after one, two, or three quarters in the program.

IV. Terminal Objectives:

A. The student must demonstrate minimum competency on the CGP test or its equivalent (a score of 48 or better).

B. The student must write an essay (minimum three paragraphs, 200 words) which is judged acceptable by at least two of the faculty members assigned to read the essays.

MATHEMATICS 096, 097, 098

SPECIAL STUDIES MATHEMATICS

5 HOURS INSTITUTIONAL CREDIT

I. Course Description

Mathematics 096, 097, and 098 are courses designed to prepare those students who have had less than two years of high school algebra and/or those who are deficient in their mathematics background to take credit courses in mathematics. Emphasis is placed on the fundamental operations and manipulations with numbers and algebraic expressions. While the mathematics content is designed to be covered in two quarters, three courses are designated in order to allow extra time for Special Studies work without penalty. On the basis of a diagnostic test and/or teacher evaluation, students are placed in classes according to need.

II. Course Objectives

The student will be able to:

1. Add, subtract, multiply, and divide correctly using whole numbers, common fractions, and decimals.
2. Find equivalent expressions using fractions, decimals, and percents.
3. Solve problems using proportions.
4. Solve problems using percents.
5. Solve problems using metric units of distance, weight, and volume.
6. Determine area and volume of common geometric shapes using metric units.
7. Add, subtract, multiply, and divide signed numbers.
8. Simplify absolute value expressions.
9. Solve simple 1st degree equations.
10. Use variables to translate a given English phrase into a mathematical expression.
11. Classify a given set as finite or infinite.
12. Use set symbols properly.
13. Enumerate a set given in set-builder notation and use set-builder notation to denote a set whose elements are listed.
14. Indicate whether two sets are related by being subsets, proper subsets, equal, or disjoint.
15. Find the union, intersection, and complement of given sets.
16. Graph numbers on the real number line.
17. Determine whether a number is rational or irrational.
18. Identify and/or exemplify each of the following properties of real numbers: closure for addition or multiplication; associative property for addition or multiplication; commutative property for addition or multiplication; distributive property of multiplication over addition; additive identity; additive inverse; multiplicative identity; and multiplicative inverse.

19. Simplify expressions containing grouping symbols.
20. Simplify expressions using the laws of exponents.
21. Simplify expressions containing radicals.
22. Evaluate algebraic expressions.
23. Determine whether an equation is an identity or a conditional equation.
24. Solve first-degree equations, including fractional equations and literal equations.
25. Solve word problems which require the student to set up a linear equation.
26. Solve and graph 1st degree inequalities.
27. Graph linear equations in two variables.
28. Solve a system of two linear equations by graphing and/or algebraic method.
29. Solve word problems which require the student to set up a system of two linear equations.
30. Determine whether a given expression is a polynomial.
31. Classify polynomials as monomials, binomials, or trinomials.
32. State the degree of a polynomial and list its coefficients.
33. Evaluate polynomials for given values of the variables.
34. Add, subtract, multiply, and divide polynomials.
35. Factor polynomials by removing the greatest common factor.
36. Factor polynomials by that are the difference of two squares.
37. Factor trinomials that are the product of two binomials.
38. Solve quadratic equations by factoring.
39. Solve quadratic equations using the quadratic formula.
40. Reduce rational expressions.
41. Add, subtract, multiply and divide rational expressions.
42. Solve 1st and 2nd degree equations involving rational expressions.

III. Method of Evaluation

Tests will be given at the end of each unit of material. A grade of 80% or better is considered satisfactory. Students not achieving that criterion will be expected to do extra work in the laboratory and retake alternate examinations on the same material until a minimum grade of 80% is attained.

A homework assignment will be due every day. It is to be turned in at the beginning of the period, and no late homework will be accepted. Homework will be graded, and students not achieving 80% will be expected to get help and take advantage of supplementary material in the math lab, so that they can rework the homework until it is satisfactory. Students are not allowed to take unit tests until all previous unsatisfactory homework has been made up.

Those students who at the end of the quarter have completed all objectives, achieved an 80% or better on all homework, unit tests, and the comprehensive final examination, and who have met the minimum standard on the Comparative Guidance and Placement Test will be given an ES for the course. (Satisfactory-ready to exit developmental program.) Students who are progressing satisfactorily but need to remain in the Special Studies sequence will be given an PS for the course. Students whose work has been unsatisfactory will receive a U for the course.

PSYCHOLOGY 099

EDUCATIONAL AND PERSONAL SKILLS DEVELOPMENT

5 HOURS INSTITUTIONAL CREDIT

The primary purpose of this course is to assist Special Studies students in the development of positive, realistic self-concepts. Underlying this objective is the assumption that when students feel good about who they are, they can realistically deal with their personal strengths and weaknesses and will be in a position to make sound vocational, educational, and personal decisions.

Students can develop positive self-images and receive feedback through the following methods:

1. Small group interaction and discussion
2. Individual counseling
3. Values clarification exercises
4. Psychometric evaluation

Goal setting and personal decision-making are direct outcomes of the values clarification process. The following are the means by which students can take positive steps toward attaining their goals:

1. Career investigation
2. Educational exploration
3. Study skills instruction

The class meets three days a week during the quarter. Two days a week are set aside for individual counseling and test interpretation. Satisfactory grades are given on the basis of attendance and participation in class activities.

READING 096, 097, 098

SPECIAL STUDIES READING

2 HOURS INSTITUTIONAL CREDIT

I. Course Description

Reading 096, 097, and 098 are consecutive courses designed to help students increase the comprehension of materials, read with 80-100 percent accuracy so that immediate success will improve his self-concept. Context clues and structural analysis will assist the student in attacking new words resulting in vocabulary improvement. Surveying, skimming, scanning, intensive and critical reading are included to assist the student in the development of flexibility in his reading techniques.

II. Course Objectives

The student will be able to:

1. Know long and short vowel sounds.
2. Know consonant sounds, consonant blends, and diagraphs.
3. Learn syllabication and accent generalizations and use these to pronounce new vocabulary encountered in reading.
4. Learn common prefixes and suffixes and the changes they make in words.
5. Learn how contextual and structural clues will enable him to make an educated guess at word meaning.
6. Grow from the literal level to the interpretative level of comprehension of complex sentences, paragraphs, and short articles, with 80-100 per cent accuracy.
7. Find a new word to avoid repetition through efficient usage of the Dictionary and Thesarus.
8. Be skilled in skimming and scanning.
9. Develop an awareness of the necessity for determining the purpose for which each selection is read.
10. Increase the efficiency of his study habits by a marked improvement in the students' power of concentration.

II. Course Objectives Cont.,

11. Increase reading speed and comprehension to 450 words per minute with 80-100 percent comprehension.

12. Develop critical reading skills to the point that the students shall recognize the author's purpose in writing an article and determine whether or not his purpose was accomplished.

III. Course Content

Students are referred to Reading 096 when they fail to score 43 or above on the CGP Test. A reading resume will be completed by each student to determine his interests and to attain some idea of his background. The student is further given the NDR Test to check vocabulary competency as well as comprehension. Assignments made each week will be completed in groups with the assistance of an instructor or aide so that the student will experience immediate success. All reading assignments are accompanied by comprehension questions, vocabulary exercises and reading exercises that demonstrate the main idea, significant details, and organization. Comprehension scores will be kept on graphs in individual folders so that progress can be immediately seen. Brief lectures will be given explaining the techniques to be used in survey, skimming, scanning, intensive reading and critical reading. Handouts and listening tapes will further reenforce these techniques. Immediately following each lecture the student will be given an opportunity to practice the skills explained.

The student will receive practice in timed reading. He shall be given 20 minutes to read 5 paragraphs and answer five questions on each with 80-100 percent comprehension. This should improve his proficiency in taking a timed test.

The Nelson Denny Reading Test and the CGP Test will be administered at the end of the quarter.

IV. The students reading grade is determined in three ways:

A. The student required to take reading by the CGP test must score 43 or above to receive an ES (exit satisfactory). Students making scores lower than these will receive a PS (progressing satisfactorily) and may proceed to the next course.

B. All assignments must be completed.

C. A student will be dropped from the roll with a WF (withdrew failing) after unexcused absences equaling two week's attendance. Thismeans the student will be dropped as of the last actual day of attendance.

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